

## **CLAIMS**

1. A signal interface, comprising:

a host board;

a right angle connector mounted to the host board, the right angle connector including a receptacle;

an optical transceiver module having an edge connector that electrically connects with the receptacle; and

means, interposed between the optical transceiver module and the host board, for shielding electromagnetic interference (“EMI”) about the electrical connection of the edge connector with the receptacle.

2. A signal interface as defined in claim 1, wherein the means for shielding attaches to the host board.

3. A signal interface as defined in claim 1, wherein the means for shielding comprises an EMI shield having a base and a plurality of walls extending from the base, the walls defining a seating surface that engages a rear end of the optical transceiver module when the edge connector is received into the receptacle of the right angle connector.

4. A signal interface as defined in claim 3, wherein the seating surface of the shield element and the rear end of the optical transceiver module are complementarily angled to physically engage one another.

5. A signal interface as defined in claim 1, wherein the means for shielding comprises a shield element having a base and a plurality of walls extending from the base, the walls including a plurality of extended surfaces that each engage a rear end of the optical transceiver module when the edge connector is received into the receptacle of the right angle connector.

6. A signal interface as defined in claim 1, wherein the optical transceiver module conforms to the XFP standard.

7. A transceiver apparatus, comprising:

a host board;

a right angle connector mounted to the host board having a receptacle, the right angle connector electrically coupled to feedthroughs disposed in the host board;

a transceiver module having an edge connector extending from a rear end of the transceiver module, the edge connector inserted into the receptacle;

an electromagnetic interference (“EMI”) shield element having a shield seating surface mated with a transceiver module seating surface disposed on the rear end of the transceiver module; and

the EMI shield element shaped to shield the rear end of the transceiver module and the right angle connector.

8. A transceiver apparatus as defined in claim 7, wherein the EMI shield element is comprised of a conductive elastomer.

9. A transceiver apparatus as defined in claim 7, further comprising a elastomer gasket that is interposed between the shield seating surface and the transceiver module seating surface.

10. A transceiver apparatus as defined in claim 7, wherein a conductive ground plane located in the host board is electrically connected to a portion of the EMI shield by a plurality of conductive vias.

11. A transceiver apparatus as defined in claim 7, wherein the shield seating surface is tilted at an angle with respect to the host board and the transceiver module seating surface is tilted at a complementary angle.

12. A transceiver apparatus as defined in claim 7, wherein the EMI shield element includes two sidewalls and an end wall forming a hood about the right angle connector.

13. An optical transceiver module assembly, comprising:

a connector mounted on a host board;

an optical transceiver module having an edge connector that extends from a rear end of the optical transceiver module, the edge connector being received by a receptacle defined in the connector; and

an electromagnetic interference (“EMI”) shield including a base that defines an aperture, the aperture sized to receive the connector of the host board, the base being parallel with respect to the host board and reducing the emission of EMI when the edge connector is received by the connector of the host board.

14. In an optical transceiver module assembly that includes an optical transceiver module and a host board, a shield for use in reducing electromagnetic interference (“EMI”), comprising:

a base defining an aperture, the aperture being sized to receive a connector that is electrically connected to the host board; and

a plurality of extended portions operably connected to the base, the extended portions being configured to reduce EMI from the optical transceiver module assembly when the optical transceiver module engages the connector.

15. A shield as defined in claim 14, further comprising:

a plurality of wall portions extending from the base, wherein the extended portions are located on the wall portions.

16. A shield as defined in claim 15, wherein the wall portions include a front wall portion, a back wall portion, and two sidewall portions, each sidewall portion being connected to both the front and back wall portions.

17. A shield as defined in claim 16, wherein the back wall portion has a height greater than that of the front wall portion, and wherein each sidewall portion is angled.

18. An optical transceiver module assembly, comprising:

a connector;

an optical transceiver module having an edge connector that extends from a rear end of the optical transceiver module, the edge connector being received by a receptacle defined in the connector; and

an electromagnetic interference (“EMI”) shield positioned at least partially about the connector, the shield having a horizontal base and a plurality extended surfaces positioned in a spaced-apart arrangement on the base, the extended surfaces positioned to reduce EMI from the rear end of the optical transceiver module.

19. An optical transceiver module as defined in claim 18, wherein the extended surfaces are arranged in a tooth-like configuration on the base.

20. An optical transceiver module as defined in claim 18, wherein the base defines an aperture that receives at least a portion of the connector.

21. An optical transceiver module as defined in claim 18, wherein the extended surfaces are positioned on wall portions, the wall portions extending from the base.

22. An optical transceiver as defined in claim 21, wherein the rear end of the optical transceiver module is angled with respect to the horizontal base, and wherein the

wall portions are shaped such that the extended surfaces engage the rear end of the optical transceiver module when the edge connector is received by the connector.

WORKMAN NYDEGGER  
A PROFESSIONAL CORPORATION  
ATTORNEYS AT LAW  
1000 EAGLE GATE TOWER  
60 EAST SOUTH TEMPLE  
SALT LAKE CITY, UTAH 84111



23. An optical transceiver module assembly, comprising:

a host board;

a host board connector attached to the host board, the host board connector having a receptacle oriented substantially at a right angle with respect to the host board;

a cage mounted on the host board such that the host board connector extends into the cage through an open portion defined in the cage;

an optical transceiver module having an edge connector extending through a rear portion of the optical transceiver module, the rear portion being slanted with respect to the host board, the edge connector being received into the receptacle of the host board connector; and

an electromagnetic interference ("EMI") shield, comprising:

a base defining an aperture that receives a portion of the host board connector, the base operably connected to the host board such that it extends through the open portion defined in the cage;

a back wall portion extending from the base;

two sidewall portions extending from the base; each sidewall portion being slanted to form a continuous wall with the back wall portion; and

a plurality of extended surfaces located on the back wall portion and sidewall portions, at least some of the extended surfaces engaging the slanted rear end of the optical transceiver module when the edge connector is received into the receptacle of the host board connector.

24. An optical transceiver module assembly as defined in claim 23, wherein the extended surfaces of the EMI shield are positioned in a spaced-apart arrangement on the wall portions of the base.

25. An optical transceiver module assembly as defined in claim 24, wherein the back wall portion and sidewall portions are positioned on the base such that they surround a portion of the aperture.

26. An optical transceiver module assembly as defined in claim 25, wherein the base is substantially parallel to the host board.

27. An optical transceiver module assembly as defined in claim 26, wherein at least some of the extended surfaces of the EMI shield have rounded top portions, the rounded top portions engaging with the slanted rear end of the optical transceiver module.

28. An optical transceiver module assembly as defined in claim 27, wherein at least a portion of the EMI shield is formed of an elastomeric material.

29. An optical transceiver module assembly as defined in claim 28, further comprising a groove defined in the base to enable the base to receive a portion of the cage.

30. An optical transceiver module assembly as defined in claim 29, wherein at least some of the extended portions are located on the base.

WORKMAN NYDEGGER  
A PROFESSIONAL CORPORATION  
ATTORNEYS AT LAW  
1000 EAGLE GATE TOWER  
60 EAST SOUTH TEMPLE  
SALT LAKE CITY, UTAH 84111